# Decentralising Open Education Using Blockchain Technology

## Abstract

The emergence of Blockchain technology promises to decentralise and revolutionise not only the financial world, but also open education in various ways. Blockchain technology offers opportunities to thoroughly rethink how we find and share open educational content online, as well as how we get accredited for what we have learned and how this accreditation affects our career and learning trajectory.

A Blockchain is a publicly shared immutable ledger, which uses crypto-currency techniques to minimise any security risk. This technology offers a decentralised peer-to-peer infrastructure, where privacy, secure archiving, consensual ownership, transparency, accountability, identity management and trust are built-in. Blockchain technology can act as a provenance protocol for sharing data across disparate semi-trusting organisations, without the need for any central control. The value of Blockchain technology at documenting, verifying, and sharing data across diverse stakeholders can be a particularly valuable asset in today's fast-pacing economy, which is largely driven by continuous learning and credentialing.

Blockchain technology can support the capacity building of stakeholders to create, access, re-use, adapt and redistribute OER in several ways. First of all, Blockchain technology offers secure mechanisms for recording the provenance of data. These mechanisms can be used to securely record the provenance of OER so that intellectual property rights are protected. The immutability offered by the Blockchain ensures that the provenance records of OER always remain valid and cannot be tampered or falsified. Additionally, a Blockchain-based reputation point system can offer incentives to stakeholders for authoring, reusing, adapting and redistributing OER.

The QualiChain research and innovation project focuses on the assessment of the technical, political, socio-economic, legal and cultural impact of Blockchain technology and decentralisation in education. QualiChain investigates the creation, piloting and evaluation of decentralised solutions for storing, sharing and verifying education and employment qualifications and explores the potential of Blockchain technology for disrupting the domain of education, as well as its interfaces with private education, the job market, public sector administrative procedures and the wider socio-economic developments.

This Interactive Activity will explore the different aspects of open education that are affected by decentralisation. More specifically, it will be focused on the ways that the authoring, sharing, re-using and accrediting of OER can be supported by decentralisation and the use of Blockchain technology. Participants will also have the opportunity to try out and evaluate the online platform of the QualiChain project, which offers Blockchain-based accreditation of OER, as well as career and learning pathway building services around the Blockchain-based accreditation of OER.

## Keywords

Decentralisation, Blockchain, Open Education, Open Educational Resources, Badges, Accreditation.

## Structure

This Interactive Activity will be structured as follows:

- *Presentation*: A pre-recorded video will present how Blockchain technology can be used to decentralise open education and facilitate the capacity building of stakeholders to create, access, re-use, adapt and redistribute OER.
- *Mini learning activity:* Participants will be invited to join the online platform of the QualiChain project and perform on this platform a short series of tasks related to finding OER, receiving and verifying a Blockchain-based badge, as well using the career and learning pathway building services offered by the platform.
- *Evaluation:* Participants will be invited to answer a short online survey in order to share their views and feedback about this Interactive Activity.

## Objectives

This Interactive Activity will offer to participants:

- An awareness of what Blockchain technology is, how it is currently being used and what its potential is.
- A good overview of the range of scenarios for the use of Blockchain technology in open education.
- Hands-on experience using an online platform for Blockchain-based accreditation of OER.
- An insight into best practices for designing a decentralised OER ecosystem based on the Blockchain.

## References

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